

Virginia WILDLIFE

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DRAPER



We Salute the Fencerow

The overgrown fencerow or hedge is the epitome of good wildlife management. It is here where wildlife finds much-needed food, protection, relaxation and avenues of travel (see article "More Fencerows for Wildlife" by I. T. Quinn, pages 16-17).

Virginia WILDLIFE

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COMMONWEALTH OF VIRGINIA



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Cover

The largemouth black bass is Virginia's principal fresh water game fish. Found largely in eastern ponds and lakes, it commands the interest of more sportsmen than any other species of fish in Virginia. The painting is by Duane Raver, Jr., of Raleigh, North Carolina.

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The restocking of wild cottontails imported from other states is at best a very dubious project.

RABBITS down the **RAT HOLE!**

By JIM TREFETHEN and DAN POOLE

How wise is it to restock imported cottontails? Read some facts on past projects and draw your own conclusions.

Reprinted by permission of *Hunting and Fishing* magazine.

IT WAS hard work. The wooden crates were bulky and heavy and their sharp edges dug uncomfortably through the thin spots in a hunting jacket. The 4 men plodded silently through the snow, each intently clutching his load and sweating in spite of cold that brought little puffs of vapor with each labored breath. Damp collars pulled heavily across their shoulders, and waist lines grown soft from winter inactivity protested against restraining belts. The lead man in the ragged file stumbled over a stump hidden beneath a low drift and fell clumsily to one knee.

"Watch it, Bill," warned the man behind him. "Those bunnies cost us two dollars apiece."

Bill pulled himself erect, still clutching his precious crate. "Can't we find a place nearer the road to dump them?" he sputtered. "What's wrong with right here? This is probably as good a spot as any."

"Best rabbit cover in the county is right over the hill, feller. Let's get going."

Twenty minutes later the sportsmen reached a swale abutting the edge of a cornfield where the yellow stalks pushed starkly through the snow. A tight lacework of tracks beneath the blackberry thickets told of a good native rabbit population. Here the men tenderly lowered their burdens to the ground and paused to rub the numbness from their arms and backs.

Shortly, Bill knelt beside his crate, pulled off a mitten and fumbled with the catches on a lid. Three brown balls of fur catapulted into the snow and streaked through the brush, their white tail-lights bobbing from sight down a runway. As each lid flipped open, more rabbits bounded into the cover.

The men, their labors forgotten, watched with pleasure marred only when one pathetic bundle of fur was found lifeless in a corner of the last crate. But 11 of the dozen rabbits purchased by the Indian Ledge Rod and Gun Club had been delivered to the threshold of their new home.

Bill slapped his thigh as the last of the cotton tails disappeared. "By golly!" he exclaimed. "It was tough work but worth the trouble. With these added to the ones already here, we should have some real hunting next fall."

The game propagation and stocking committee received a standing vote of thanks at the next club meeting for a mission well accomplished.

But just how much did their efforts contribute to the local rabbit population? That is the important dollar question, not only for the Indian Ledge Rod and Gun Club but for many other sportsmen's organizations which are spending cash and energy in purchasing and releasing cottontails or pressuring their game departments to enter into ill-advised stocking programs.

The answers, available in state studies and the hard biological facts, are disillusioning. Unless a gambler's chance paid off, every one of the club's rabbits ran straight into destiny in the form of what biologists call "carrying capacity."

There is nothing mysterious about this term "carrying capacity." A bucket can hold only so much water; a basket can hold only so many eggs; and any given area of land can support only so many animals, just as a barn can house no more than the number of cows for which it was built. When dealing with inanimate subjects, the situation is simple and the carrying capacity can be measured without difficulty. It becomes more complex when living animals must be considered, and even more so when dealing with wildlife.

A man does not have to be a farmer to recognize when the barn is overcrowded; it is evident to even the inexperienced eye. But the symptoms of overcrowded game ranges are far less obvious. The same restrictions of food supply and space which regulate domestic stock operate in the same way against rabbits and other wild game.

Unlike barnyard stock, wild animals will not tolerate crowding. As the population of an area approaches the carrying capacity, competition for food and cover increases sharply. Close contact makes the animals more vulnerable to disease and predation. Some move into less suitable territory where the hazards of a precarious existence are immediately multiplied.

Foxes, weasels, and horned owls find easy pickings and motorists along adjacent highways begin to note the mangled bodies of migrants killed during the night. When the relentless equalizing processes of nature have been completed, all surplus animals over and above the carrying capacity will have died.

Thrice blessed by the goddess of fertility, the rabbit potentially can quadruple its numbers within one breeding season. It can withstand tremendous hunting pressure and demonstrate a comeback unequalled by any other game animal.

In areas of sufficient food and cover, a 70 per cent annual harvest is not out of reason. Even in the best habitat, however, rarely will there be more than one rabbit to each acre. The usual density in good cover is one to every 3 to 6 acres. Maintenance of a no greater concentration should be expected by those who set out to build up local cottontail numbers.

Carefully conducted investigations with marked rabbits have shown repeatedly that much of the time, energy and money invested in direct stocking has been wasted. Success has been achieved only in those few instances where some measure of habitat development was undertaken along with releases.

But game managers have strong evidence which shows that native rabbits soon populate areas where food and cover conditions are improved by management, and no stocking is needed or advisable except in rare situations.

Let's examine the facts. Stocking has a single end—to make better hunting. To achieve this, rabbits liberated before the breeding season must survive in good numbers and bring off successful litters. If released prior to the hunting season, they must live long enough to come before the guns.

New York game men found that only 13 of each 100 released in the late fall lived to breed the following spring. Only 9 of each 100 were killed during their first exposure to hunting. Seventy per cent of the marked rabbits stocked in a Pennsylvania experiment died within 10 days after release. These are no "by guess and by gosh" estimates. The results were obtained by careful study, and all released rabbits could be identified positively.

In Ohio, imported cottontails and native wild rabbits were held under identical conditions for 3 months. At the end of this time, 86 per cent of the native stock still was alive and healthy, but 85 per cent of the imported bunnies had become fish food for a local hatchery.

In 1951, a few New Jersey sportsmen shot 17-dollar rabbits. That year, the New Jersey Division of Fish and Game bought 20,000 cottontails for \$27,000, tagged them and released them in the field. Extensive followup studies by department personnel revealed that by the time the hunting season came around only 1,600 had survived, a gold-plated testimonial to the fallacy of direct stocking.

Because the operating funds of the New Jersey department are derived principally from the sale of hunting and fishing licenses, this money really came from the sportsmen's pockets. A small-game hunting permit entitling the holder to take 6 rabbits a day cost \$3.15. By bagging a daily limit of these short-lived aristocrats, the shooter had a \$102 return for his investment!

When compared to the usual annual harvest of rabbits by hunters, the number of cottontails released in any state is ridiculously small. The Pennsylvania Game Commission purchased and released an average of 50,000 rabbits each year from 1916 to 1936. Each season during this period, hunters harvested between 2¼ and 4½ million. At most, the stocked rabbits could represent only two per cent of the seasonal kill. In view of the present knowledge of their high mortality, they actually amounted to much less than one per cent of the total yearly harvest. And there is no scientific evidence to show that they produced enough offspring to justify their cost.

Well-meaning sportsman's clubs are anxious to do something constructive for wildlife conservation. Releasing imported wild rabbits, however, should not be one of them.



No thinking sportsman would jeopardize the welfare of the animals he is trying to increase. Yet, such a real danger exists in rabbits harboring tularemia and bubonic plague that many state health departments now forbid their importation. These dreaded diseases can afflict humans as well as rabbits. At least 5 states have found diseased animals in shipments of imported cottontails.

Through the years, various "natural systems" of propagating rabbits have met with little success. While differing in detail, each program entailed concentrating mature animals under wire in good cover and live-trapping the young for releasing in depopulated areas. In others, rabbits were captured in reluges, cemeteries, within city limits and in similar places which are inaccessible to hunters, and released in open territory. Game authorities have been able to detect no significant improvement in hunting as a result of this work, and these programs are costly.

Only 5 of 23 state game departments east of the Mississippi now liberate rabbits, according to a survey by the Maryland Game and Inland Fish Commission. Paradoxically, 17 states report that their sportsmen are maintaining their heads-on battle against unbeatable biological odds by continuing private stocking programs.

Had the members of the Indian Ledge Rod and Gun Club thought of their rabbit problem in the light of carrying capacity, they might have taken a different course. The feeling of many state conservation agencies on the direct stocking of rabbits is best summed by the statement of an eastern game official. Referring to its effect upon hunting, he said, "So far as restocking goes we cannot prove anything, but psychologically, it has a wonderful effect."

But there is a way to improve your rabbit hunting; it can be done by increasing the land's carrying capacity. Called habitat restoration, it is the development of food and shelter patches in areas that have become unproductive for wildlife. The ability of this method to do the job has been proven in Missouri—the top cottontail state in the country.

Missouri never has imported a single rabbit for stocking purposes. Yet up to a quarter-million cottontails are live-trapped there each year for sale in other states. In the past 20 years, hunters in the Show-Me State have harvested from 3 million to 4 million rabbits annually during a minimum 6-months season. Commercial trappers legally take many thousands more for meat and fur. Only in the past year has the widespread drought caused the Missouri department to curtail commercialization and cut the hunting season to 4½ months—still a generous one by any standards.

Game experts attribute Missouri's rabbit bonanza to the fact that her farmers look upon the animals as a crop and a ready source of cash. In areas where they are most abundant, cottontails are trapped and sold by nearly 60 per cent of the rural families. These farmers have learned that all they need do, if they want to have a reliable annual crop, is manage parts of their land as rabbit pastures. This is done by encouraging brushy field

corners, plugging gullies with brush, and leaving standing plots of grass so the rabbits can feed, nest, and seek shelter.

Rabbits need help if they are to carry on as our most dependable shock absorber of hunting pressure. Nearly 25 per cent of all the shotgun shells fired last year were directed toward this little gamester. In the northeastern states alone, over 15 million cottontails taken by rich men, poor men, adults and youngsters, ended up in stew pots and frying pans. Little wonder that the state conservation departments and the sportsmen's clubs are eager to maintain goodly numbers wherever they are found.

Most state game commissions no longer stock rabbits. Instead, they are directing their technical skills toward increasing the carrying capacity of the land. Under improved conditions, they have found, their native stock will build up quickly and will produce offspring that are more adapted to the local climate than any import ever would be. Some of the leaders in this movement are Pennsylvania, New York, Massachusetts, Maryland, Missouri, and West Virginia.

To promote a more unified state-wide development of habitat restoration, many of these conservation departments now offer special services to interested individuals and groups. As a supplement to their own programs, several states supply seeds and cuttings of food and shelter plants which are chosen for their usefulness under local conditions. Others provide technical know-how, send out instructive literature, and help develop land and game management programs. Many have demonstration areas that sportsmen can tour and study; still others furnish heavy equipment that may be used without charge to develop food and cover plots.

Sportsmen's clubs that already have restoration programs of their own are enthusiastic in telling others that their efforts are paying off—not only in increased game populations, but in providing continuous and challenging projects which have greatly unified their organizations.

Mr. Cottontail is an easy fellow to please. Give him the right selection of food and shelter to satisfy his seasonal needs, and he will take care of the restocking himself. These two basic requirements need not be provided in extensive acreages, because a rabbit generally spends his lifetime in an area no larger than 10 acres. A number of small open plots separated by strips of brushy



Money and energy spent on habitat improvement for game is a much more worthy project for sport clubs.

cover is ideal. The rabbit can dash from one to the other without exposing himself.

Idle fields, fence corners, gullies and wash-outs, and shaded spots alongside woodlots are excellent locations for these improvements. Food patches should cater to the rabbit's keen, yet seasonal, appetite. Succulents like wheat, oats, chicken lettuce, and clover are spring and summer favorites. Grains and shrubby plants with tender buds and soft green bark help out during the food-scarce days of winter.

Low pines, vines, and cut brush make excellent cover plots. Fruit tree trimmings placed at a distance from the orchard entice the bunnies away from live trees and give them food and shelter at one location.

Increasing carrying capacity through habitat restoration offers you, the sportsman, both a challenge and a reward in better hunting that you have helped create.

Do not expect miracles; habitat restoration is no panacea. It requires patience and planning. But expert help is available everywhere; your own state conservation agency, the U. S. Fish and Wildlife Service, the Soil Conservation Service, the Extension Service, several private conservation organizations, and many others offer their services. Call upon them, visit their demonstration areas, let them explain, and then you be the judge.

Not so spectacular perhaps as opening a crate and watching a dozen fuzzy-tails bounce off into the brush; but those who have tried it know that habitat restoration is far safer, far less costly, and far more certain.

THE FISHERMAN

Forgetting city life—the sweating street,
The raucous cries, the glare, the traffic's rush—
He is content to hold a rod and line
In company of hemlocks and a thrush.

EDDIE W. WILSON



"With a growl, she bounded across the road, cuffed the laggard with a big paw and clapped him soundly on the rump with the other."

SKYLINE at NIGHT

By KENNEDY LUDLAM

Outdoors Editor, Washington Daily News

Traveling the Skyline Drive at night in Virginia's Shenandoah National Park can be a stimulating experience—especially when nature's wildlife awakens and takes to the road to put on a show.

IT WAS nine o'clock of a late spring evening, and the coming four hours of Route 29 with its heavy traffic rumbling at us along an endless ribbon of highway seemed suddenly a wearisome waste of energy. It was much too beautiful a night to trundle along in the wake of interstate trailers belching noise and smoke, so with a sidelong glance at my wife, I swung the nose of the car into a little country road that reached up and lost itself in the comfortable shadow of the friendly Blue Ridge. There was plenty of time. We had all night, if necessary, but we craved a continuation of the peaceful solitude of the day spent along a tinkling trout brook. The roar of the main road with its nervous urge for hurry drifted behind us as we rose into a cooler, cleaner country where a deep breath was like a glass of wine. The spaniel on the seat between us lifted his nose, sniffing, and curled up for a nap with a grunt of satisfaction, while Glen raised her arms and twisted into an easy, relaxing stretch.

I pulled up under a huge elm wearing a fichu of flowering dogwood and consulted the map in the dim glow of the dash light. Drowsy little towns, Avon, Afton, lay ahead and then back to distasteful urbanity at Waynesboro. But there was the Skyline Drive! A hundred miles of space and friendly adventure. Others took the Skyline for its sight of magnificent distances by daylight. What would it offer to explorers bold enough to invade its privacy at night? Presently our little country road paused politely for the grand trunk highway toiling its way to the crest of the ridge, and for a few minutes we were back among the smells and noises of a modern artery of progress, but soon enough we swung to the right, on a deserted thoroughfare to the mysterious matters of nature on a mountain-top. No need for hurry here. With the windows rolled down we shivered slightly in the invigorating stimulus of two thousand feet of altitude, and Glen awoke from her peaceful nap. Six hours of wading the restless waters of Big Piney River



"Only the lights gave any hint of our coming."

had made my legs weary, and I gratefully slid out from under the wheel as Glen took over. The moon came up as we rounded the first turn—the biggest moon ever—and Glen pulled down the sunshade to shield her eyes from the glare. It was a wonderful road, we were alone, and the cushiony tires made no noise to warn whatever might be waiting around the next curve. Only the lights, two yellow pencils of hypnotic fascination, gave any hint of our coming and these lights were the cause of one of nature's common tragedies. As we softly rolled around a bend, they shone on two cottontail bunnies frolicking in the road. One dashed for the friendly briars along the side, but the other stayed just too long, frozen motionless in the glare of the beams. Glen stopped, but it was too late. A dark shadow over the luckless rabbit, a flapping of huge wings, and the owl drifted off into the woods, sure for this night, at least, of his dinner.

Several miles further, we assisted at a lesson in ursine discipline, and this act of the play was pure comedy. Mother Bear, with Junior and his sister, was crossing the road. As always we pulled up and waited. The

family hurriedly started across together, with the *mater familias* anxiously and suspiciously eyeing our motionless lights. She led the way with sister dutifully following. Junior, however, had a mind of his own, and regretted leaving that berry-patch where he had been enjoying himself so much. He turned back, and for a minute Mother Bear didn't notice. She reached the other side safely with one cub and suddenly missed the other. With a growl, she bounded across the road, culled the laggard with a big paw, and whacked him soundly on the rump with the other. Such a squalling you never heard! Slap! Slap! Slap! And Junior lost no time this trip in crossing over. We waited chuckling, until the path was clear, and rolled gently on our way.

At Swift Run Gap, we crossed a busy stream of traffic with coughing trailers, impatient pleasure cars hurrying home for the night, and loaded produce vans carrying the next day's foods to the busy cities further north. Then once again the pleasant loneliness of the deserted Drive.

The lights of Shenandoah winked at us from the Valley and an old boss 'coon argued the right of way, his ringed tail twitching with every quarrelsome snarl. The spaniel wanted to get out and clear the road for us, but calmed down when the rights of the matter were explained. After all, it *was* his road at night. We were outlanders. Even the two gray and dignified 'possums we met at the south end of the tunnel resented our intrusion into their private business at such an hour, and a red fox barked at us above Luray.

On and on through the lovely spring night, with only the whispering tires and an occasional sigh from the spaniel to break the quiet.

At Big Meadows Ranger Station, we disturbed the midnight lunch of a herd of deer. Three adults and two very new fawns with their spots shining plainly in the creamy moonlight ceased their grazing, and looked up as we rolled easily past. Frightened! No indeed. Just curious—for the minute, then back to lunch.

And so through the shimmering miles eventually to the toll booth at Front Royal, deserted at this hour (which made us feel even more conspiratorial), down the mountain to the land of all-night diners and hurrying traffic. But we'll go back again, all three of us, to spy on Nature and her people during the hours when they feel secure from man, and go about undisturbed on their own particular errands.

REAL CAPITAL

"The only real capital of a nation is its natural resources and its human beings . . . if we skimp on that capital, if we exhaust our natural resources and weaken the capacity of human beings, then we shall go the way of all weak nations . . . it is well to remember that our poorest communities exist where the land is most greatly eroded, where farming does not pay, where industries have moved out, where flood and drought have done their work . . ."

—Franklin D. Roosevelt



Gone forever from the northeast is the heath hen.



Seriously endangered in the southeast is the Florida key deer.

Caution for conservationists

Our Vanished and Vanishing Wildlife

By J. J. SHOMON

Fifteen birds are gone—33 more are threatened. Five mammals are gone—24 are threatened. What can we do about it?

SINCE George Washington's day, or more specifically since 1768, a regrettable 15 species or subspecies of American birdlife have become extinct on the North American continent. To this list we can add 5 species of mammals, with possibly several other subspecies, and one species of fish. There may have been other subspecies to pass out of the picture which we don't know about or which failed to be recognized before taxonomists began seriously classifying plant and animal life. I particularly refer to the Townsend bunting and the sea mink, about which there has been considerable question in the past.

According to the latest information I have been able to obtain, 15 species of birdlife have recently disappeared in America. They may be listed with their probable dates of extinction as follows:

Guadeloupe macaw	Unknown
Louisiana paraquet	Unknown
Gosse macaw	1800
Townsend bunting	1832
Pallas cormorant	1852
Great auk	1853
Cuban tricolored macaw	1864
Labrador duck	1878
Guadeloupe caracara	1900

Carolina paraquet	1904
Black-capped petrel	1912
Passenger pigeon	1914
Heath hen	1931
Eskimo curlew	1930
*Ivory-billed woodpecker	?

Time does not allow me to go into the details of the causes of decline of the above species, since extinction factors are complex, obscure. Suffice it to say that natural extinction of a species is the rule in nature, just as biologic death of a single individual follows a basic natural law. Plant and animal forms have arisen and fallen in the geologic past, a number leaving no trace whatever of their existence, some living to evolve into other forms, still others to exist as remnants to carry on the heartbeat of life. We do know that some forms just naturally disappear. In recent times the inroads of settlement and such things as pursuit of fur and plumage and eggs have had serious effects on the status of the rarer forms of wildlife. Excessive hunting for sport and trophies and even wanton destruction has helped widen the path of oblivion for many species.

Rare and Threatened North American Birdlife

According to the latest reports available, the following 33 species of American birds can be classed as rare or threatened in America:

Paper before the annual meeting of Virginia Society of Ornithology, Lynchburg, Virginia, April 23, 1951.
*Probably extinct.



The whooping crane is down to a tragic 26 birds. The annual census this autumn will be anxiously awaited. Whoopers have been in dangerous balance in the past decade.



The much talked about American wolverine is down to a pitifully few animals in the more remote sections of central and western Canada. Only the strictest kind of conservation measures can save it.



The California condor is down to 60 birds.



The everglades kite is also down to about 60 birds.



Only a few thousand of the Attawater prairie chicken remain.



The American bald eagle is down to a few thousand nesting pairs.

*Ivory-billed woodpecker
Whooping crane
Laysan teal
California condor
Everglades kite
Hawaiian goose
Trumpeter swan
Greater sandhill crane
Limpkin
Attawater prairie chicken
Ross goose
Masked bobwhite
White-winged dove
Aplomado falcon
Peregrine falcon
Harris hawk
Mexican black hawk
Red-bellied hawk
Sennett white-tailed hawk
Short-tailed hawk
Sage hen
Great white heron
Glossy ibis

*Probably extinct.

Mississippi kite
Swallow-tailed kite
White-tailed kite
Florida burrowing owl
White-crowned pigeon
Cape Sable seaside
sparrow
Aleutian tern
Roseate tern
Kirtland warbler
Sutton warbler

As you can see, the above is a large and tragic compilation of disappearing birdlife. It is indeed a sad commentary on America and its people. It is known now that some—and I emphasize *some*—species could have been saved were conservation measures begun soon enough. I wish a short resume of each of the rarer species were possible, but time does not permit it. A few of the more critical wildlife forms, however, deserve a short treatment.

Ivory-billed Woodpecker. This magnificent woodpecker has just about disappeared from the country. The National Audubon Society says the ivory-bill is "now prob-



Becoming scarce indeed is the American fisher, a valuable furbearer of the coniferous Canadian forests.



The much maligned cougar is showing signs of scarcity.



The white-crowned pigeon is slowly but surely losing out to civilization.

ably extinct" and that the Society has closed its sanctuary in northwestern Florida. I have not been able to learn of any recent records that ivory-bills are present anywhere in the South with the possible exception of northeastern Louisiana, where two female specimens were reported seen by Roger Tory Peterson, the eminent ornithologist, in 1942. One ivory-bill was seen in this same Singer Tract as late as December 1946.

Whooping Crane. This bird is now generally conceded to be the rarest North American bird. The birds have now migrated north. A year ago the population at the Aransas Refuge in Texas was listed as 21. Twenty-four of the birds returned to their wintering grounds in Texas last fall, an increase of 3 birds. There are also 2 individuals in the New Orleans Audubon Park Zoo. The dramatic story of saving these rare birds is well known, so I will not go into the whooping crane story.

Laysan Teal. This bird is reported as occurring on Laysan Island of the Pacific Ocean and, according to the Fish and Wildlife Service, its numbers are down to a critical low figure, perhaps less than 50 birds.

California Condor. The next rarest bird is the California condor, of which about 60 birds still remain. Dr. Clarence Cottam, Assistant Director of the U. S. Fish and Wildlife Service, says that the population of condors has been held at about 60 birds for a number of years. It is a senescent race with low reproduction, the birds being subject to many ailments which do not befall the more vigorous species. Their nesting grounds are largely in the Los Padres National Forest in the High Sierras of California.

Everglades Kite. This bird is now restricted to about 60 individuals in the Lake Okeechobee area of Florida. The Fish and Wildlife Service is hopeful that the development of their Loxahatchee Refuge southeast of Lake Okeechobee will favor the return of this unique hawk. The bird is restricted in its food habits and lives largely upon a single species of mollusk which is found in this area.

Hawaiian Goose. This is another very rare form of waterfowl. It is flightless and it is critically low in population. Fortunately, however, a few birds were taken to England recently and there they seem to be doing well in captivity and are breeding.

Trumpeter Swan. According to the Audubon Society the number of this species has been increasing in recent years. In 1935 when the Fish and Wildlife Service acquired the Red Rock Lakes Migratory Waterfowl Refuge in Montana there were only 73 trumpeters left in the United States. Since that time, information has disclosed that there was a fair population in northern British Columbia and southern Alaska. Through conservation and protection the trumpeters have come back until now the population is listed at 577. The U. S. Fish and Wildlife Service is transplanting young trumpeters to a number of other refuges where they formerly occurred as breeding birds, and there is hope of an increase.

Greater Sandhill Crane. Largely restricted in its nesting habits to the large wildlife refuges in the west, this crane is at a very low ebb. The larger sandhill crane is endangered because it is associated with the lesser sandhill crane, which is abundant and sometimes causes crop damage.

Limpkin. This is a rare and threatened bird in the southeastern section of the United States, namely, extreme southern Georgia and Florida. The federal refuge program may be bringing the species back somewhat.

Attawater Prairie Chicken. This is another threatened species. Valgene Lehmann in his *North American Fauna* 57 lists the birds as being reduced to a few thousand. He points out that their future is entirely dependent upon land practices in the Texas area.

Ross Goose. Information reported to me is that the species is hovering somewhere in the neighborhood of 2400 birds. Though fully protected, they are seen with their larger cousins, the lesser snow goose, and a few are killed each year. They are said to nest in the Perry River region where it nears the Arctic Coast.

Though I have not listed the American bald eagle as critical, it is generally conceded that this fine American bird is slowly disappearing. Myrtle Broley in her book *Eagle Man* says that the birds have seriously declined in recent years and that the bald eagle is now in a bad way. Her husband, Charles Broley, who has banded over 1000 eagles, believes the U. S. population is down to 1500 nesting pairs. The main remaining concentrations are in Florida and the Chesapeake Bay area.

Extinct North American Mammals

As reported earlier, 5 species of American mammals have disappeared from North America since 1768. Since all wildlife is related I believe they should be mentioned here. They are as follows:

Steller sea cow	1768
Sea mink	1860
California grizzly	1900
Arizona elk	1901
Dawson caribou	1908

Rare and Threatened North American Mammals

A number of mammals have been reduced generally throughout their range and only remnants remain. A list of 24 endangered species is as follows:

Teton grizzly bear	Plains wolf
Plains grizzly bear	Cougar
Merriam elk	Guadeloupe fur seal
Texas mountain sheep	Nelson walrus
Glacier bear	Atlantic walrus
Fisher	Sierra mountain sheep
Black-footed ferret	Nelson mountain sheep
Wolverine	Florida manatee
Sea otter	Carolina beaver
Desert fox	Elephant seal
Kit fox	West Indian seal
Woodland caribou	Florida key deer

May I point out again that this list may not be complete, and, that there is not full agreement among mammalogists and zoologists and biologists as to the exact status of these species. For example, one conservation group classes the Eastern fox squirrel as rare and threatened, yet the animal is fairly plentiful over certain sections of its range. There is not complete agreement on the status of the cougar because it is such a persecuted

species. The marten too, a beautiful furbearer, is in critical balance, but its exact status is not yet fully known.

The important thing to remember is that during comparatively recent times a perfectly amazing number of species of American wildlife has been extinguished, or is nearing extinction, in North America. It is time for conservation groups to take stock of the situation and do something drastic about it. An action program of protection and education is urgent.

In passing, may I offer a few suggestions as to what conservation groups can do to help safeguard our priceless American wildlife heritage.

There are two things that man can do: provide the necessary protection for the existing threatened species by reducing, in a practical way, all destructive factors. This means safeguarding the right quality and quantity of food and cover for a species and reducing to a minimum the decimating factors such as wanton destruction, illegal gunning, floods, overgrazing, excessive lumbering, etc. Secondly, there must be a resurgent crusade for conservation in America, directed at both young and old, so that all persons in all walks of life will have a *greater respect for all living things*. This means mass education toward the conservation concept as a way of life.

Education and protection, the two greatest bulwarks we have for the safeguarding of our remaining critical wildlife, somehow must be strengthened. This demands an action program. Every conservation group should begin—if it has not already done so—a program of action aimed at the long-range conservation and restoration of the critical species in its area. A real challenge faces the Virginia Society of Ornithology, just as it faces other conservation groups in the state, in the nation. The Virginia Society of Ornithology is in an enviable position to lead the state conservation battle for birdlife. Will the challenge be accepted or go unanswered?

That New-Fangled Idea, Conservation

"There are mountains in Attica which can now keep nothing but bees, but which were clothed, not so very long ago, with fine trees producing timber suitable for roofing the largest buildings, and roofs hewn from this timber are still in existence. There were also many lofty cultivated trees, while the country produced boundless pasture for cattle.

"The annual supply of rainfall was not lost, as it is at present, through being allowed to flow over a denuded surface to the sea, but was received by the country, in all its abundance—stored in impervious potter's earth—and so was able to discharge the drainage of the heights into the hollows in the form of springs and rivers with an abundant volume and wide territorial distribution. The shrines that survive to the present day on the sites of extinct water supplies are evidence for the correctness of my present hypothesis."

—*Critias of Plato* (427-347 B.C.)

"First, and most essential, we must know the physical realities which we face. Too long we have reckoned our resources in terms of illusion. Money, even gold, is but a metrical device. It is not the substance of wealth. Our capital is the accumulation of material and energy with which we can work. Soil, water, minerals, vegetation, and animal life—these are the basis of our existence and the measure of our future."

—PAUL B. SEARS

"I have read many definitions of what is a conservationist, but I suspect the best one is written, not with a pen, but with an axe. A conservationist is one who is humbly aware that with each stroke he is writing his signature on the face of the land."

—ALDO LEOPOLD

Summertime

The common everyday woodchuck is a great deal of summertime sport for men. When hunting has been the only kind of shooting left and crow shooting. The former sport. Woodchucks with tremendous appetites can be destructive in grain fields and garden crops, their den entrances often-times are a hazard to farm animals and equipment.

Since most farmers consider the groundhog a pest, Virginia's hunters will be doing landowners a favor by keeping these animals under control, and will at the same time be providing themselves with a fascinating sport.

Most shots are made offhand. The hunter should take advantage of a gun rest and a good aim.

(Commission photos by K)



The common woodchuck is no dumb animal. He is fast, sensitive and well aware of the dangers that lurk around the average farm. To put the bead on him, study his habits.



This 'chuck made a den in the center of an alfalfa field. His hole could have been the cause of a farm accident.



A groundhog in a scope sight makes a full target. Don't jerk trigger, but squeeze off.



The woodchuck belongs to the rodent family, and his teeth can mean real business.



But even woodchucks have their good points. Their burrows provide hiding places for many furbearers, and their flesh when properly cooked is excellent eating.

Fair Game

uck or groundhog furnishes a
or countless Virginia sports-
duced to a standstill, about
that of woodchuck hunting
particular can be a profitable
erious



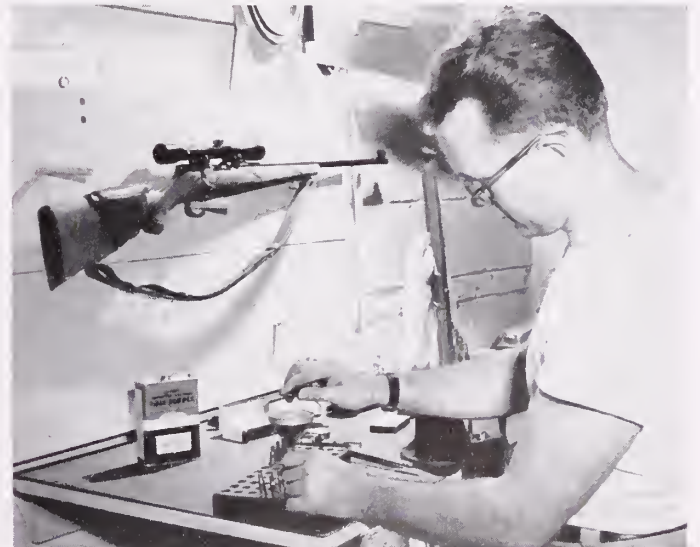
Call upon the farmer to show you the best place to hunt woodchucks. He knows his land and where the wildlife lives.



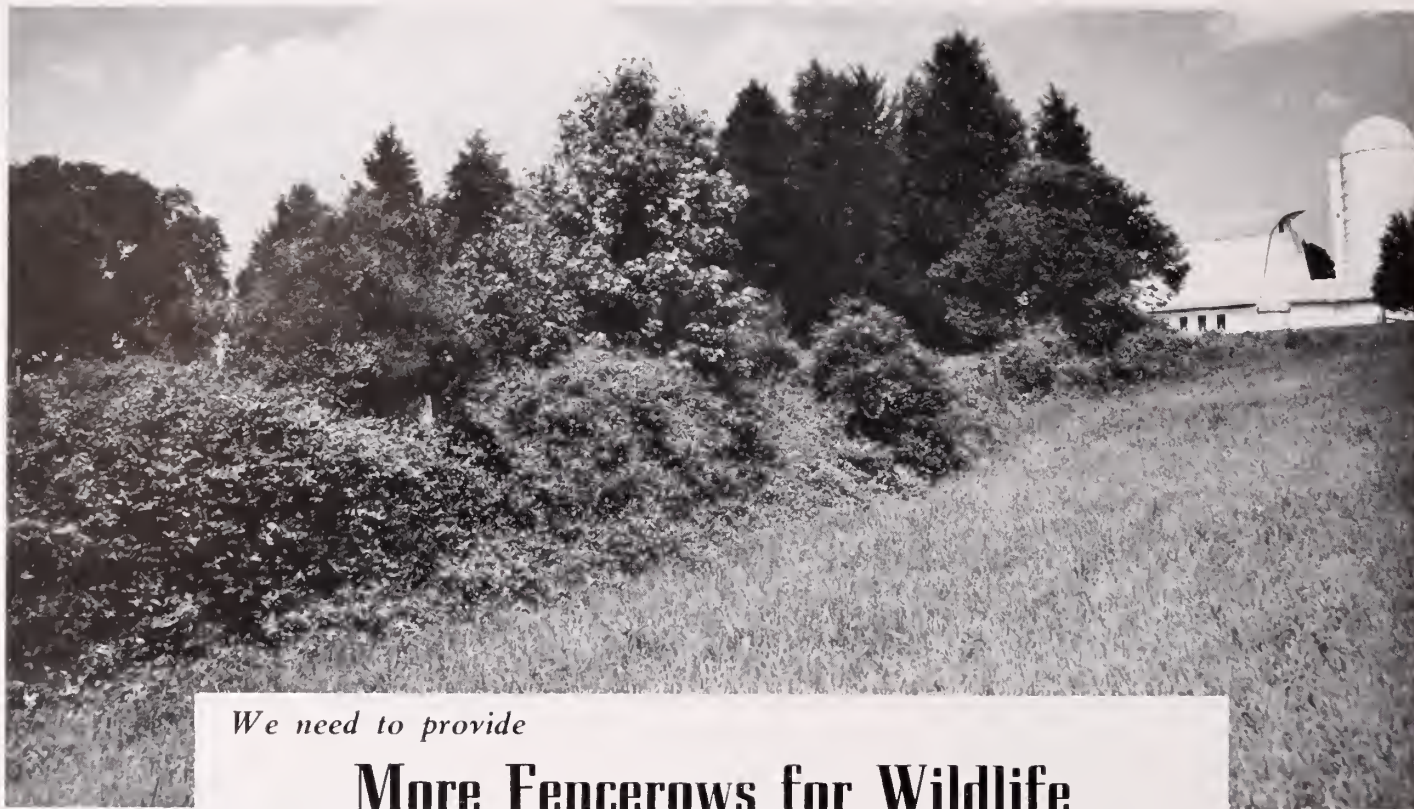
Good binoculars are helpful in locating 'chucks. To get within range, study the terrain and local cover. Then begin stalking your game.



The standard 22 long rifle shell as compared to a high powered 22 caliber shell contains five to ten times as much powder. Woodchucks should be shot with power-packed cartridges.



Avid hunters spend much time and money on getting good equipment. Here Jack Langford of Richmond loads his own 22 high powered shells.



We need to provide

More Fencerows for Wildlife

By I. T. QUINN
Executive Director

Wildlife needs food and cover and protection each day throughout the year. The natural overgrown fencerow can do much to bring these essential requirements to our game

WANT more wildlife about your home? Do you want to see more quail, rabbits, squirrels, song-birds around your house or in the fields, Do you want to do something practical to protect and increase wildlife? Of course you do. Everybody does. The big drawback is *what to do* and *how to do it*, and maybe *when* to do it.

Well, gentle reader, if you will take a few minutes to read up on the instructions which follow, you *certainly can* do your part to increase wildlife.

First, we must remember that wildlife, like people, needs certain things to live. Biologists call these needs *food* and *cover* and *protection*, and they add, these must be in the right amount and quality.

We need food every day. So does wildlife. We need shelter. So does wildlife. We need protection from enemies. So does wildlife. Give wildlife the things it needs to live and it will thrive.

The fencerow is a godsend to wildlife. It furnishes many needs: food, travel avenues, shade, nesting places, and escape cover. Each is important.

The people who have studied wildlife know that birds and mammals—and insects—are more common in brushy places than anywhere else. A fencerow that is allowed to grow up and left *unburned* and *ungrazed* helps provide an ideal edge type of cover for wildlife.

By *edge* is meant a zone where the woods and fields meet. This could be a fencerow or field border or even a roadside.

During harvest time, leave some seed for wildlife. Eared corn is best, but peanuts, cabbage and other legumes are excellent game foods.

Studies show that food is more plentiful in this *edge* than in the fields or in the woods. This being the case, it behooves us to increase this type of habitat for wildlife if we want more birds and mammals about.

Take the quail for an example. If we allow more fencerows to grow up, get weedy and brushy, we will provide for more insects. Quail eat insects and so will be benefited. The added insects, berries, seeds and plants will attract other wildlife forms too, for when food is ample, all life profits by it.

Of course it is not sufficient to just let fencerows grow up and hope they'll perform a miracle. They won't. Like in gardening or anything else, man must step in and give nature a helping hand.

Enough work has now been done in habitat improvement to know that certain plant foods are better as plantings for wildlife than others. To make your fencerow a veritable cafeteria for wildlife, start favoring such native plants as persimmon, black cherry, chinquapin, dogwood, gum, wild plum, red cedar, hawthorne, apple,

hazelnut, sumac, grape, blackberry, ragweed, beggarweed and pokeweed.

If you must plow next to your fencerow, then save a few furrows for wildlife. Plant corn, combine milo, the several lespedezas (Korean, sericea, and bicolor), vetch, soybean, cowpea, sorghum. This will pay dividends.

Though many people despise Japanese honeysuckle and poison ivy, both are useful to quail as escape cover and emergency food.

If you want to keep more squirrels about, favor the cornfield in the corners and go easy on cutting the mast trees: beech, oak, hickories.

For rabbits, don't forget a late summer and fall turnip patch. Bunnies like nothing better than turnips. Ladino clover is also good. So are leftover cabbages.

The more food you can leave near the fencerows, the better. Fencerows or hedgerows form naturally when you let native plants take over along a fence or a field border, but like weeding in a garden, you can favor or remove certain plants by routine thinning operations.



The overgrazed fencerow is no home for wildlife or anything else. To attract game, let the fences grow up and keep cattle and fire away.



A natural hedgerow between the fields acts as a travel lane for game. It is fencerows like this that make farm land good game cover.

Food is the biggest single requirement of wildlife, with cover and concealment a close second. When you provide extra food for wildlife, you are at once making real effort to provide for more normal animal life on your property.

Besides furnishing food for wildlife, the modern fencerow promises to play an important role in the new scheme of 20th century farming.

Edminster, a splendid wildlife biologist, listed the advantages of the hedge in 1939. They are still true today and may be listed as follows:

1. *Retards runoff*—checks flow of water across broad slopes, thus reducing its scouring and carrying power.
2. *Checks soil erosion*—by checking runoff, reduces silt load transported.
2. *Moderates wind and loss of soil moisture*—reduces drying action of wind and increases absorption of moisture by retaining snow cover and checking runoff.
4. *Aids adjacent conservation measures*—serves as a permanent guide and marker for contour operations, as plowing and strip cropping; protects and supplements the grass cover when planted above a diversion terrace.
5. *Supplements crop pest control*—insectivorous birds and mammals, as well as predacious insects, live in the hedge.
6. *Benefits wildlife*—provides nesting sites, cover, food, and travel lanes for birds and mammals.
7. *Improves landscape values*—helps to make the farm a more attractive place in which to live.

Come harvest time, why not do an extra bit for wildlife? A growing, dense fencerow will not only provide more food but will insure more nesting and breeding places for animals and will provide much-needed shade areas and travel lanes which most wildlife needs.

“What would a blind man give to see the pleasant rivers, the meadows, the flowers, the glory of the sun and the many blessings which we enjoy each day—and too often forget to praise God for them.”

—IZAAR WALTON



Peace of soul: a farm pond, a cane pole and two of man's best friends.

August is Panfishing Time

By DR. E. C. NETTLES
Commissioner from Wakefield

WHEN the reluctant largemouth gets into his muleish summer mood and refuses all offerings, that's the time to concentrate on his smaller, more active cousin, the bluegill bream.

August anglers who seek the utmost in hot weather fishing enjoyment and a nice mess of table fish, will find the prince of panfish, the bluegill, a fish worth investigating.

Almost every disciple of Isaak Walton recalls his early boyhood days when a trip to the local pond or the "ol' fishin' hole" produced a nice mess of bream. But fishing for this bantamweight of the fin tribe is hardly restricted to youngsters. More adults go in for this scrappy little tussler than any other fish.

Catching the bream is no great science. He will smash at a dangling worm as well as at a popping bug. When he's hungry, he'll bite anything that faintly resembles food.

The bluegill bream is perhaps the best known of the sunfishes in Virginia. While easy to confuse with a number of other sunfish species, it can be identified by its dark greenish back and orange to yellow undersides and its dark section of the back end of the dorsal fin. The bone under the "ear flap" on the back of the gill cover extends to the margin of the flap or nearly there.

Generally speaking, the bluegill bream is at home in

the same waters as the largemouth bass, and the two get along well together. Bream are mostly insectivorous, destroy comparatively few bass fry, and breed rapidly. In August they still breed and love to hang around stumps, brush heaps, lily pads, docks, sunken logs, boat landings, weed beds or around any deep hole where they know there is a chance for food.

Bream have been caught in Virginia weighing upwards of a pound and a half, but the average is about a half pound. By the fisherman's thumb rule a bream that goes 6 or 8 inches is a "good one", and a 10-inch is a dandy.

A few well-managed Virginia ponds consistently produce lunkers. Custis Pond in King William County has always been known as a good "bream pond". So is Cohoke Pond in King William. In Sussex County, the Commission-controlled Airfield Pond has yielded some nice fish. Chickahominy Lake in New Kent County is another fine bream spot, and many easterners make this lake their regular hangout during August when bream are hitting strong.

No matter from what water the bluegill comes, you can be sure he'll make a delicious table fish. The flesh is firm, delicious, flavorful, and sweet. For best results, bream should be cleaned and scaled fresh and then kept cold until frying time. Cooked in good bacon grease or

peanut oil, he's a top morsel. And don't overlook smoking. Properly soaked in brine and smoked, he's a delicacy.

While bluegills are taken with anything from garden hackle to catalpa worms, they seem to prefer bugs of various types. Fly-casters, realizing the bream's craving for insects, take advantage of this fact and go "bugging" with artificials.

Almost any type of small popping bug will play havoc with the bream. The best lures, however, seem to be the small red and white poppers with a feathered tail.

Some fishermen swear by the white-legged rubber spider and many catch fish on their favorite trout flies. A smaller spinner ahead of a trout fly helps immensely.

Cane pole fishing is popular with most people. It is inexpensive, easily obtainable, and takes beating around well. A whippy 8 to 10 foot pole is best with a gaudy bobber and a 3, 4, 5, or 6 Carlisle hook. Baited with worms they are sure meat getters.

For those with sportier tastes, there's the 3½ ounce split bamboo fly rod with delicate 4 pound test leader. A chunky bream on such tackle will more than prove his title as prince of panfishes. Give this fellow a try this month and see if he doesn't prove to be a spunky piece of fishlife on the end of a rod.



Prince of panfish, the bluegill.



M. Wheeler Kesterson Passes

Mr. M. Wheeler Kesterson, the Commission's supervising game warden for the Daniel Boone district, of Ewing, Virginia, suddenly passed away at his home on July 6, 1954. His death came as a shock to thousands of friends and acquaintances who knew of him personally and of his noble work in behalf of conservation in southwestern Virginia.

Mr. Kesterson came to Richmond on January 1, 1950, to take over as the first chief of the Game Commission's law enforcement division. He stayed in Richmond until April 1, 1952, when he returned to southwestern Virginia to assume duties again as supervising game warden of the Daniel Boone district.

Mr. Kesterson was born at Cumberland Gap, Virginia, and received his education in Powell Valley and at Lincoln Memorial University, Harrogate, Tennessee. He spent a number of years in the northwestern United States and hunted, as a youth, with "Buffalo Bill" William F. Cody, but returned to Powell Valley in 1920.

Mr. Kesterson established an enviable record with the Virginia Game Commission in his untiring efforts to restore wildlife to Virginia. He took especial interest in his beloved southwestern Virginia and did much to promote wildlife conservation in the area and to establish the proposed Virginia-Kentucky-Tennessee National Park to be set up at Cumberland Gap, to which he contributed land and many local and historic relics. He is survived by Mrs. M. Wheeler Kesterson, his wife, a son and daughter, and several grandchildren.

Plan for quail by

Improving Crop and Hayfields for Game

By WILLIAM P. BLACKWELL
District Game Technician

IN recent years a great deal has been written about improving habitat on farm land for game. The majority of this writing has centered around planting food and cover patches in strategic locations around farms. Let it be understood at the outset, that while this is excellent management and obtains the desired results by increasing game, there are other methods that give results.

We have been told that food and cover are the two factors most likely to govern the amount of game on any given piece of land. This is one hundred percent true. On most farms there is produced in the average year an ample supply of food and cover, but in too many cases it is destroyed by the farmer or his livestock. For those interested in having game, this need not be the case. We are now in an era of clean farming with its "manicured" edges and fence rows. Many farmers take pride in being able to see every nook and corner of their farm from one high point. But to those who have seen the countryside of France or Great Britain with its beautiful hedgerows, this grassy landscape cannot help but foster monotony. The European farmer, who farms much more intensively than his American rival, has found through experience that the insects which destroy grain and forage crops are not as abundant adjacent to shrubby edges as they are next to grassy fence rows. The presence of insectivorous birds, and quail, help keep the pests from becoming a nuisance. By protecting woody growth in its proper place, dividends over and above the returns in quail are made available to the farmer. The destruction of food and cover occurs during the harvest of small grain, corn, or hay, and also during the annual August "Clean Up the Fence Row" period. If during these two periods small areas of feed and cover could be left the results would be more game during the fall and winter.

In Virginia there are a number of different types of farming and the farm economy or land use has a great deal to do with the abundance of game. The tobacco belt of "southside" is made up of small farms with small fields, a good distribution of woodlands, and a more than average land that is not intensively cultivated or



Much can be done for wildlife during regular farming operations in the summer months and at harvest time in the fall.

grazed. The land being worked in tobacco is kept extremely clean and farmed intensively, while the remaining portion is often improved by growing a crop of Korean lespedeza. It is the presence and abundance of lespedeza that gives this section of Virginia good quail populations. The pork belt further east with its peanut economy is another land use that is very favorable to game, especially quail. The abundance of corn and soybeans produced to fatten hogs provides excellent food for quail. The common practice of leaving corn and soybeans in the fields to be "hogged down" also makes food available to quail late into the winter.

The livestock economy, whether it be dairy, beef, or horses, is a situation that does not favor game and especially quail throughout large areas of the Shenandoah Valley and northern Virginia. It is this type of farm that requires most careful planning in order to have more quail.

The more progressive stock farms are divided into permanent pasture, permanent hay, and permanent crop lands. Permanent pastures are being fertilized, seeded, grazed, and clipped in an effort to make each acre carry a maximum number of cattle for the largest number of days per year.

This intensive use of land virtually destroys everything in the way of food and cover used by game during the fall and winter months. Though limited amounts of green material is used by game at this season, seeds provide the bulk of their diet. In normal years cattle are not grazed on any section of the farm except pasture land. The crop land is usually farmed in a three or four year rotation consisting of corn followed by small grain, followed by one or two years of hay. When farmed in these rotations this crop land has very little to offer game during fall and winter months. The corn land is ordered up immediately after harvest and it is seeded to small grain; this usually results in the loss of any wasted corn which is covered when small grain is sown. The small grain has little value other than winter green for game species. The hay strips of this rotation which often contain Korean lespedeza are customarily mowed in late

September or early October and have almost no cover and only a very limited amount of seed which is shattered by raking. The seed is utilized by quail only on those edges where it borders good cover. Permanent hay as alfalfa is cut late and provides nothing to attract quail during fall and winter. Thus on many stock farms there is little for game after summer is over. The vast majority of game moves off these farms during the "fall shuffle" and goes to nearby areas where it can find suitable habitat.

As mentioned previously, for those who want quail the situation can be improved by leaving food and cover in suitable spots. Many farmers suffer from the illusion that they have quail on their farms because they see and hear them whistling everywhere during the spring and summer. During the fall and winter, however, when they can be hunted and enjoyed to the fullest degree they have gone elsewhere seeking the necessities of life.

We must keep in mind that neither food nor cover occurring by itself will attract and hold game. They must be found together before they will produce. Grazing, we have decided, has to be avoided on game lands, and thus our attention must be directed to the hay and crop land first. The presence of cover along fence rows, ditch banks, roads, creeks, steep places, corners, and woodland edges is very desirable. This cover need not be tall growing trees that will shade wide strips on either side, but bushes and shrubs of low growing varieties which will provide both food and cover. In locations where tall growing species would not be objectionable, evergreens are very desirable and can be obtained reasonably from a wide selection of species. There are many plants native to the average farm which will volunteer in areas excluded from grazing, cultivation and mowing, and will develop in two or three years into areas of benefit to

game. This natural or volunteer method may be speeded up by transplanting either plants or seed from your farm or your neighborhood.

Some plants of value to game are plum, cherry, sassafras, sumac, wild grape, green brier, poison ivy, Virginia creeper, redbud, dogwood, coral berry, hazelnut, chinquapin, black haw, thorn apple, elderberry, pokeberry, honeysuckle, blackberry, wild rose, mulberry, blueberry, holly, and many other fruit and nut bearing trees and shrubs. Common privet produces a quantity of fruit but will spread on abandoned land. These areas of cover can be made beautiful as well as useful with flowering species such as dogwood and redbud used in conjunction with evergreen species such as pines and holly. Ornaments such as flowering crabapple and others can further add beauty and usefulness.

Many native food plants may be encouraged by merely disking land early in the spring. This will bring ragweed, native lespedeza, pokeweed, milkweed, beggar lice, and other desirable foods. A much better procedure which every farmer can follow is to leave unharvested strips of grain and hay grown as regular crops next to good cover. On many farms corn, milo, wheat, oats, barley, beans, peas, lespedeza, clover, and millet are grown in routine farming operations. These are excellent wildlife foods and where odd corners and strips are left unharvested next to good cover they will serve as well as a food patch planted exclusively for game. The same holds true of hay at the last cutting in the fall. If the back swath can be left unmowed it would provide both food and cover during fall and winter. The practice of planting small grain in the spring rather than in the fall is very beneficial if the preceding crop of corn is harvested with a picker rather than a field chopper, binder, or cut by hand. It will make the waste corn available to game for several months longer in the fall.

There is a word of caution, however: many owners and managers instruct their tractor drivers to leave strips of food or cover but when they go back for a check they find that the strips which have been left unharvested are being used as an access road for entering and leaving the field with tractors, wagons, trucks, and other farm machinery. Under such conditions, these strips will not fulfill the purpose for which they were left. They must be protected against mistreatment.

In a previous issue of the magazine the recommended management of farm wood lots was covered by Mr. Tuttle. This article has attempted to give helpful hints on improving crop and hay fields for game. The obvious omission is the recommended practices on grazed lands. This is the part that little or nothing is known about. There are a number of experiments underway to find ways and means of aiding game on grazing lands and as information is gathered it will be reviewed in future issues. In the meantime, if you will concentrate your efforts on woodlands, croplands, and hay fields, the number of quail and other game on your farm can be increased greatly.



Neither food nor cover by itself will attract and hold game. They must be found together in order to be helpful to wildlife.



Outdoor cooking can be fun and, with care greaseless and palatable.

OUTDOOR COOKING NEED NOT BE GREASY

By DR. FRANKLIN A. TYLER

WHENEVER outdoor preparation of food is mentioned, someone—often a feminine critic—will say "Grease" with an upturned nose. This criticism is frequently justified too, but it need not be so. Appetizing food is possible, with the sky for a ceiling and without benefit of cooking range.

Now that the outdoor season is upon us, some practical cooking suggestions may be in order.

Consider bread. Instead of the thick heavy frying pan bread, light appetizing biscuit may be baked with an inexpensive, folding, reflector oven. It may be bought or home-made and is easily transported. When set up near the fire, the frying pan and coffee pot may be in use on the other side while the bread is baking undisturbed.

Over a fire which produces a good bed of coals, cooking meat is easy. Many fine steaks have been broiled over hot coals by relatively inexperienced cooks. A new Boy Scout up for his cooking test can do reasonably well over a bed of coals. Camping Scouts are clever at cooking on a green stick, particularly a combination cube of meat, bacon, slice of onion, continuing that order for one third of the stick and turning it slowly just over the coals. Although participating in numerous jaunts with a Scout Troop, we are always amazed at how much of this 'dish' a Scout can put away at an evening meal.

Fish might require a little more finesse. The fire should be hot enough to sear each side initially in broiling, then it may be slowly cooked further from the coals. A strip of bacon wrapped around a fish while cooking improves the flavor no end. A large fish may be split,

fastened to a well-greased wood slab, supported by stakes at right angles to the fire.

The mud-pack cooking of fowl, duck or fish is another excellent method. We first used this idea while camping in the mountains of South Carolina and it is a timesaver for other activities. Sliced potato, onion, bacon are placed in the fowl or fish, then it is wrapped in fresh leaves and encased in a mud pack. This mass is placed in the ashes and covered with coals and hot ashes, ensuring a nice meal when returning to camp hours later. The clay covering is easily cracked and removed.

A staple rice meal can be prepared easily. Cook the desired amount of rice and set aside a third. Add scrap meat, sausage or hamburger, onions, can of tomatoes (or tomato soup), season and heat slowly over the fire.

Add raisins and canned milk to the one third saved, sweeten with sugar or maple syrup, heat slowly. Serve hot or cold for dessert.

Canned foods are quickly prepared without utensils. Cut nine-tenths of the top of the can and place on coals. This heats rapidly and may boil over a bit. Remove the can when the contents is hot and bend back the cut top.

Some of the optional emergency or hike rations which may be suggested are raisins, American cheese, chocolate bars, beaten biscuit, and tea bags. This combination has carried many a Scout over the Massanutten Mountain on hikes from Pitt Spring.

Outdoor cooking can be fine and need not produce either gastritis or singed eyebrows.

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

POWHATAN LAKES ACQUIRED. The Powhatan Lakes, two new public fishing ponds, comprising about 80 acres of fishable waters, have been purchased and added to the Commission's growing list of public waters. The lakes have not been stocked by the Commission because there are sufficient fish in them for the present. Irvin Bell has been appointed boat concessionaire for the ponds.

GOVERNOR APPOINTS WATKES TO COMMISSION. Governor Thomas B. Stanley has appointed I. T. Watkes, Jr., to membership on the Commission of Game and Inland Fisheries, effective July 1, 1954. Well known in the Norfolk district for his active interest in conservation and development of wildlife in Virginia, Mr. Watkes will bring a rich experience as a businessman to the Commission.

SUPERVISING WARDEN JOHNSON RETIRES. W. Harry Johnson retired as Supervising Game Warden of the George Washington District on July 31st. He had been on the law enforcement staff of the Game Commission since November 1, 1925, and had served as supervising warden since October 1, 1938. Mr. Johnson will be succeeded by William Edward Ware of Tappahannock who has been the game warden of Essex County since January 15, 1938.

DOUTHAT STUDY PAYS OFF IN BETTER FISHING. Fishing in 60-acre Douthat Lake in Bath County has improved immensely since it was drained by Commission biologists last November. Robert Martin, assistant chief of the Fish Division of the Commission, was in charge of the task of draining the lake, making a complete study and restoring better balance in the fish population. Last year only two bass were caught on opening day. This year on opening day 200 anglers caught 200 bass by count, including three between six and seven pounds.

COGGIN JOINS SPECIAL SERVICES SECTION. Executive Director I. T. Quinn announces that Joseph L. Coggin, of Patrick County, has joined the staff of the Commission of Game and Inland Fisheries as special services officer west of the Blue Ridge. A graduate of Wake Forest College, Coggin received his M.S. from Virginia Polytechnic Institute in June. He is married to the former Miss Hazel DeHart, of Patrick County, and they have a three-year-old daughter, Linda.

SPECIAL SERVICES OFFICERS ACTIVE IN SUMMER CAMP WORK. During the month of June Special Services Officers William C. Kellner and Max Carpenter contacted an estimated one thousand children in their visits to 4-H, Girl Scout, YMCA, and private camps and the Nature Camp of the Virginia Federation of Garden Clubs.

DEER MANAGEMENT PANEL ON TV. The Commission's monthly wildlife conservation program, over WTVR at 5:50 P.M. the first Monday of every month will feature a panel discussion of the Commission's deer management program on August 2nd. Executive Director I. T. Quinn and Stuart Davey, game biologist, will be interviewed by J. J. Shomon, chief of the Education Division and editor of Virginia Wildlife, who is in charge of the regular program.

COMMISSIONER ANDREWS' TERM EXPIRES. Charles D. Andrews, long-time Game Commission member from Suffolk and popular with eastern sportsmen, retired from the Commission on June 30th, following the reorganization of state congressional districts. Dr. E. C. Nettles will continue to represent the new district in his area.



Wildlife Immigrants to the United States

To help fill vacant game bird habitats in various states, the Department of the Interior's Fish and Wildlife Service periodically imports species from abroad. Within recent years, importations from Finland, Norway, Sweden, Turkey, Iran and Iraq have been made. Some of the unusual birds brought here from these countries are the chukar, seesee, and black partridge; the sand grouse; and the houbara. What is it? A houbara is a bustard of northern Africa and Asia Minor.

Conservation Parade in Bristol

Bob Eikun, Field Scout Executive of Sequoyah Council No. 713, Boy Scouts of America, sends us word that a conservation parade was staged by the Ocanosta District of the Sequoyah Council in Bristol, Virginia-Tennessee, as a climax to their observance of Wildlife Week.

During the week, Explorer Scouts visited each club to present copies of the outdoor code. Framed copies were presented to each civic club president and unframed copies to every member.

The parade featured 30 floats and 10 marching units. The floats had as some of their themes forest products, wildlife, "Don't Be A Litterbug," fire fighting and many others.

Eikun says the scouts are planning a Conservation Camporee to be held on Brumley Mountain August 27-28 this year.

Grizzly Bear to Be Protected in Colorado

The grizzly bear, one of America's most picturesque and dangerous game animals, is to receive protection in Colorado where it was once numerous but is now threatened with extinction.

The Colorado Game and Fish Commission has set aside an area on top of the Continental Divide to be known as the San Juan-Rio Grande Bear Management Area, where grizzlies are to have a sanctuary. No grizzlies can be killed within the management area, but can be live-trapped or otherwise removed if they molest livestock.

Federal and state officials estimate there are now only 12 to 20 grizzlies left in Colorado, most of them in the rugged country now set aside for their protection.



"You croaked in your sleep last night!"

Travel Council Issues New Edition of "Fishing in Virginia"

Robert Nelson, Managing Director of the Virginia Travel Council which is located in the King Carter Hotel in Richmond, announces that the new edition of the Travel Council's pamphlet, "Fishing in Virginia", is ready for distribution.

The booklet includes a guide to freshwater sport fishing in the state, with a reprint of the Game Commission's list of restocked waters and waters open to public fishing, and a guide to saltwater sport fishing in Virginia with suggestions about boats and guides available.

Texas Teacher Uses Virginia Wildlife in Science Classes

We have received a letter from Miss Virginia Chase of Longview, Texas, telling how useful she has found *Virginia Wildlife* for teaching conservation in general science. She says that for the three previous years she had taught biology and chemistry at Stuart Hall, Staunton, Virginia. When her parents moved to Texas, she secured a position teaching chemistry, physics and general science at the Gladewater High School. While in Virginia she had subscribed to *Virginia Wildlife* and entered the essay contests each year. In 1953 one of her students won second prize in the 12th grade division.

"Since moving to Texas," writes Miss Chase, "I have used my back copies of *Virginia Wildlife* for reference . . . I have found no other magazine of its type equal to it."

Pennsylvania Fattens the Kitty With Furs

The Pennsylvania Game Commission annually increases its working capital by the sale of wild animal skins seized or collected by the agency's personnel and sold to the highest bidder. In April, for example, hides of deer slain illegally during the fall and winter and others killed on the highway or in the act of damaging crops brought \$4,818.10 into the Game Fund.

Chesterfield Double Cross

Commission Photographer Leon Kesteloo went out to a farm in Chesterfield County, to get some woodchuck pictures. He left his used flash bulbs behind, so the farmer's wife, Mrs. Short, put them in the chicken house for the setting hens.

They not only fooled the hens but a blacksnake too who sneaked in for eggs and swallowed three of the flash bulbs.

Virginia IWLA Convention

Big plans are underway for the State Izaak Walton League convention in Richmond, October 2 and 3.

Top speakers representing soil, woods, waters, wildlife, waterfowl and marine resources have been arranged for and a fine banquet is planned with Dr. Havilah Babcock of Columbia, South Carolina, as speaker.

Waltonians say this will be the most important convention ever put on by the state division. Richmond is host chapter. Hotel Jefferson will be the convention center.

Reports Wanted of Turkey Broods

The Commission of Game and Inland Fisheries would like to take this opportunity to thank the conservation-minded readers who reported turkey nests and turkey broods last year. Due to their efforts, it was possible to obtain some basic information regarding the productivity of the wild tur-

key in the various sections of Virginia.

Now for another request: we need more reports again this year. Should anyone find a turkey nest or see a turkey hen with her brood this summer, kindly report the number of eggs in the nest or the number of poults with the hen to your local game warden, or directly to the Commission in Richmond. Your cooperation will be appreciated.

Bear Family Sighted in Rockingham County

Mr. C. A. "Ted" Rodamer, Blister Rust Control, recently became one of the rare people who have seen a mother bear and cubs. This unusual occurrence took place in Hone Quarry hollow, Rockingham County, George Washington National Forest. The family, mother and three cubs, came within 150 feet of him, and one cub rolled a rock down the hillside which nearly struck him. For a while he thought "the whole country was alive with bears."

Virginia Wildlife Gets Around

C. Purcell McCue, chairman of the Albemarle Board of Supervision, an enthusiastic reader of *Virginia Wildlife*, writing to executive director I. T. Quinn recently, passed on the following interesting remarks about the magazine.

Said Mr. McCue: ". . . I passed your magazine on to another lover of the outdoors. Soon he said to me that he was going to subscribe himself. Then I passed it on to another sportsman. Now I have asked him to pass it on to a definite high school boy, and so on it goes, because other members of the family cannot resist reading some of the articles. . . ."

Nice work, Mr. McCue. Your Commission appreciates this.

Essay Contest

The 8th Annual Wildlife Essay Contest will get under way next month. Watch for the announcement.

An "Open Letter" to our Subscribers

Richmond, Virginia
July 15, 1954

Dear Reader:

Will you take a couple of minutes to give us your opinion and advice on Virginia Wildlife?

For eight years now we have been publishing a fairly uniform magazine. Recently, as you know, Virginia Wildlife -- your magazine -- was rated by the Izaak Walton League of America the best state conservation magazine in the nation.

Naturally we are very proud of the award, proud of the achievement. We wish to continue to put out a good magazine -- the best within our ability. But we need your help. We need your good advice.

Would you be so kind as to fill in the questionnaire on the other side, remove the page and mail it to: Commission of Game and Inland Fisheries, Box 1642, Richmond, Virginia.

We hope that by your answers we will be able to plan a better magazine, be of greater value to you and your friends, and be of greater service to conservation education.

Gratefully yours,
J. J. Shomon
Editor

MAGAZINE QUESTIONNAIRE

Please give us your reaction to the following ten questions as they pertain to *Virginia Wildlife*.
Place a checkmark or number in the proper column or fill in.

	Yes	No	Fair
1. Do you like the size of the magazine and general appearance?	_____	_____	_____
2. Is the magazine type (the printing) to your liking?	_____	_____	_____
3. Are the articles varied enough each month?	_____	_____	_____
4. Is your magazine coming to you in good shape?	_____	_____	_____
5. Do you scan or read:	Yes	No	Some
Editorial	_____	_____	_____
Conservationgram	_____	_____	_____
Feature Articles	_____	_____	_____
Pictorial Section (Center Spread)	_____	_____	_____
Picture Captions	_____	_____	_____
Drumming Log	_____	_____	_____
Short Articles	_____	_____	_____
Field Force Notes	_____	_____	_____
Questions and Answers	_____	_____	_____
Photographs	_____	_____	_____
6. Do you preserve your <i>Virginia Wildlife</i> for future reference?	_____	_____	_____
7. What parts of the magazine do you like best now? (See list in 5.) Write in.	<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div>		

Wildlife Questions and Answers

Ques.: Will there be a bow and arrow season for deer and bear this year?

Ans.: Yes, there will be a statewide bow and arrow season November 1 - November 10 in any county where there is a general open season on the species.

Ques.: What are rough fish and why are they removed from impoundments?

Ans.: Rough fish are those which furnish little or no sport, are destructive to habitat and inferior in food quality. They are removed because they would tend to supplant the game fish under the continuous pressure of fishing for game fish only.

Ques.: From what kind of a turtle does genuine tortoise shell come?

Ans.: Tortoise shell is derived from the thin bony plates that overlap to cover the carapace of the marine hawksbill. Before cheaper plastic substitutes came into use, hawksbill hunting was a specialty in tropical and semi-tropical seas. Sometimes the plates were removed from living turtles by applying heat to the shell to make it pliable. The victims were then released and presumably grew new shields which were, however, inferior and commercially worthless.

Ques.: Is the Baltimore minnow a member of the carp family?

Ans.: No. The Baltimore minnow is an uncolored goldfish, not a carp.

Ques.: Have robins ever been considered game birds?

Ans.: Yes. Until 1913 robins were classed as game birds in some southern states.

Ques.: Is it "unlawful to transport into the state rabbits killed by shooting" as stated in Air Cargo Circular No. 1?

Ans.: No, this is an error. Rabbits are treated in Virginia just like other game which may be brought from outside into the state.

Ques.: What fish are commonly referred to as black bass?

Ans.: Smallmouth bass, largemouth bass and spotted bass are all referred to as black bass and all three species are found in Virginia's inland waters.

Ques.: How may I secure a permit to hold mallard ducks in captivity for breeding purposes?

Ans.: You should apply to the United States Fish and Wildlife Service for a permit to hold wild birds in captivity which will then be sanctioned by the Commission of Game and Inland Fisheries. However, it has been ruled that mallard ducks as much as three generations away from the wild may be considered domestics. If yours do not come under this ruling and you plan to release them on your farm pond and not hold them in close confinement, the Commission will be able to issue you the necessary permit.

Ques.: Is it legal to sell any freshwater game fish in Virginia?

Ans.: No. It is unlawful to sell any game fish taken from the public waters of the state. Game fish may be sold from private ponds for propagation purposes only and by permit from the Game Commission.

Ques.: Where can I get information about controlling the English sparrow in my warehouse?

Ans.: The United States Fish and Wildlife Service, Washington, D. C., puts out a bulletin on the control of English sparrows, Wildlife Leaflet Number 407.

Ques.: How can the age of a sturgeon be established?

Ans.: Though scales are used in determining the age of most fish, sturgeon lack scales, so investigators must use the pectoral fin. After the fin has been cut from the fish and dried, thin cross-sections are made from the first bony ray with a very fine-toothed saw. These sections are then examined under a micro-

scope to evaluate the age. The opaque bands represent the growth during summer and the dark lines the winter growth.

Ques.: Is there any record of the earliest breed of hunting dog in America?

Ans.: A spaniel is recorded as having come over on the "Mayflower". Both the setter and pointer were introduced into colonial America and many fine gun dogs were imported into this country from very early times if we are to judge from the portraits of the period.

Ques.: Can you tell me what bird is nicknamed "Robin with a sore throat"?

Ans.: That is a nickname for the scarlet tanager in allusion to its hurried hoarse caroling.

Ques.: Can you tell me how much land is handled by the Bureau of Indian Affairs? Are all the Indian land areas classed as "reservations"?

Ans.: The Bureau of Indian Affairs is trustee for some 56 million acres of Indian land. Not all are classed as reservations. The Bureau lists 205 reservations and over a hundred Indian land areas of other types where Federal programs are in effect.

Ques.: In what ways do forest fires affect fish-life?

Ans.: Forest fires remove shade from streams and lakes and permit the waters to get too warm. They also remove the protection to the top soil and allow it to run off into streams and lakes covering the spawning beds. Acids and ashes from the burned wood are very detrimental to fish life.

Ques.: Do any other birds besides nuthatches climb down tree trunks head first?

Ans.: No, nuthatches are the only tree climbing birds to attempt this novel procedure.

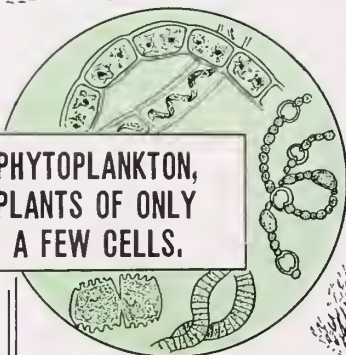
Ques.: I have seen pictures of Pacific salmon leaping and I have been wondering if it is known just how far out of water they can go.

Ans.: Under ideal water conditions, adult Pacific salmon have been known to leap 8 to 10 feet in the air during their upstream spawning migrations, according to the Department of the Interior's Fish and Wildlife Service.

Plants



PHYTOPLANKTON,
PLANTS OF ONLY
A FEW CELLS.



SMALL OR LARGE,
PLANTS ARE VERY IMPORTANT
TO ALL OTHER LIVING THINGS.



PLANTS OFFER FOOD,
SHELTER, WARMTH,
AND MORE
TO MAN
AND
BEAST



BREAK MATCHES IN TWO

PLANT COMMUNITIES,
AGES IN DEVELOPING,
MAY BE DESTROYED
BY A MOMENT'S
CARELESSNESS . . .



PLANTS OFTEN
HAVE SIMPLE
BEGINNINGS . . . BUT . . .



BEAUTY ABOUNDS
IN MANY PLANTS
WHILE . . .



DANGER!

LURKS IN OTHERS.



D. RAVEN

